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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/690,560	10/18/2000	John W. Svenkeson	00-046-NSC	1651

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EXAMINER

ALANKO, ANITA KAREN

ART UNIT

PAPER NUMBER

1765

DATE MAILED: 02/10/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/690,560

Applicant(s)

SVENKESON ET AL.

Examiner

Anita K Alanko

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/26/02 amdt "a".
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 8 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 9-11, 13, 15-17 and 20 is/are rejected.
- 7) ☒ Claim(s) 6, 14, 18 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8. 6) ☐ Other: _____

Election/Restrictions

Applicant's election of Group I in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 and 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Inaba et al (JP 04-186731A).

Inaba discloses a method of forming a conductive device comprising:

- forming a conductive layer 3 on a substrate 1 (the double-sided copper-clad laminate, page ⁵~~4~~, line 9 of translation);
- etching the conductive layer to form a plurality of conductive traces 3 (page 5, lines 10-11);
- simultaneously etching the conductive layer to form at least one mask feature 3 (page 5, lines 10-11); and
- removing (by laser ablation) substrate material that is not covered by the at least one mask feature so as to form at least one mechanical alignment feature 5A (page 5, lines 20-23) comprising an aperture.

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6/23/03

The preamble is given little weight.

Claims 1-2, 4-5, 7, 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Takatsu (US 5,284,725).

Takatsu discloses a method of forming a conductive device comprising:

- forming a conductive layer 18 on a substrate 8 (col.10, lines 22-25);
- etching the conductive layer to form a plurality of conductive traces 19 (col.10, lines 31-36);
- etching the conductive layer to form at least one mask feature 19 (col.10, lines 31-36);
- and
- removing substrate material that is not covered by the at least one mask feature to form mechanical alignment features 20, 21, 22 (col.10, lines 44-48).

The preamble is given little weight.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7, 9-11, 13, 15-17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takatsu (US 5,284,725).

The discussion of Takatsu from above is repeated here.

As to claim 3, Takatsu discloses that as a useful alternative to wet etching to remove the substrate material, that a method using lasers may be used to remove the substrate material (col.2, lines 39-42). It would have been obvious to include using lasers in the method of Takatsu to remove the substrate material because Takatsu teaches that it is a useful alternative technique to wet etching to remove substrate material.

As to claims 4-5 and 7, 11, Takatsu discloses to form apertures, side edges and slots (see Figure 6 (VI)).

As to claims 13 and 17, Takatsu discloses that various shapes such as those shown in Figure 3 may be used, but does not explicitly disclose to use at least one U-shaped mask feature. It would have been obvious to one with ordinary skill in the art to use a U-shaped mask feature in the method of Takatsu because Takatsu teaches that various shapes may be used, and U-shapes are known in the masking art and in products that have U-shaped conductive lines.

As to claims 15 and 20, Takatsu discloses to form square or trapezoidal slots 20-22, not rectangular slots (see Figure 4). It would have been obvious to one with ordinary skill in the art to use rectangular slots in the method of Takatsu because changing the shape is known in order to optimize the shape for the best final product.

As to claim 16, Takatsu does not disclose to ablate by positioning the laser beam normal to the substrate. Takatsu does not disclose any position of the laser beam. Examiner takes official notice that positioning a laser beam normal to the substrate is conventional in the art. It would have been obvious to one with ordinary skill in the art to ablate with the laser beam positioned normal to the substrate because it is conventional in the art.

Allowable Subject Matter

Claims 6, 14, 18-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not teach or suggest a method for forming a conductive device comprising etching a single conductive layer to form conductive traces and a mask feature for subsequently removing material to form a tab, as in the context of claim 6.

The closest prior art, Walburn et al (5,336,095), discloses to form a tab (Fig. 2), but there is no motivation to form the tab with a method that includes using the same conductive layer to form both the conductive traces 22 and the mask for removing material to form the tab, as in the context of claim 6.

Response to Amendment

The 103 rejection over Pellegrino and Inaba is withdrawn. Pellegrino discloses to drill alignment holes after removal of photoresist, not drilling through a mask feature formed by etching a conductive layer comprising conductive traces.

However, broadly interpreted the claims do still read on Inaba applied alone. The claims do not cite that the conductive traces form a part of the final device. Inaba discloses a layer 3 on the substrate that encompasses conductive traces and mask features.

Conclusion

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art shows method of forming conductive devices with alignment marks and conductive traces.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K Alanko whose telephone number is 703-305-7708. The examiner can normally be reached on Monday-Friday, 10:00 am-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin L Utech can be reached on 703-308-3836. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9057 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Anita K. Alanko
Anita K Alanko
Primary Examiner
Art Unit 1765

AKA
February 6, 2003